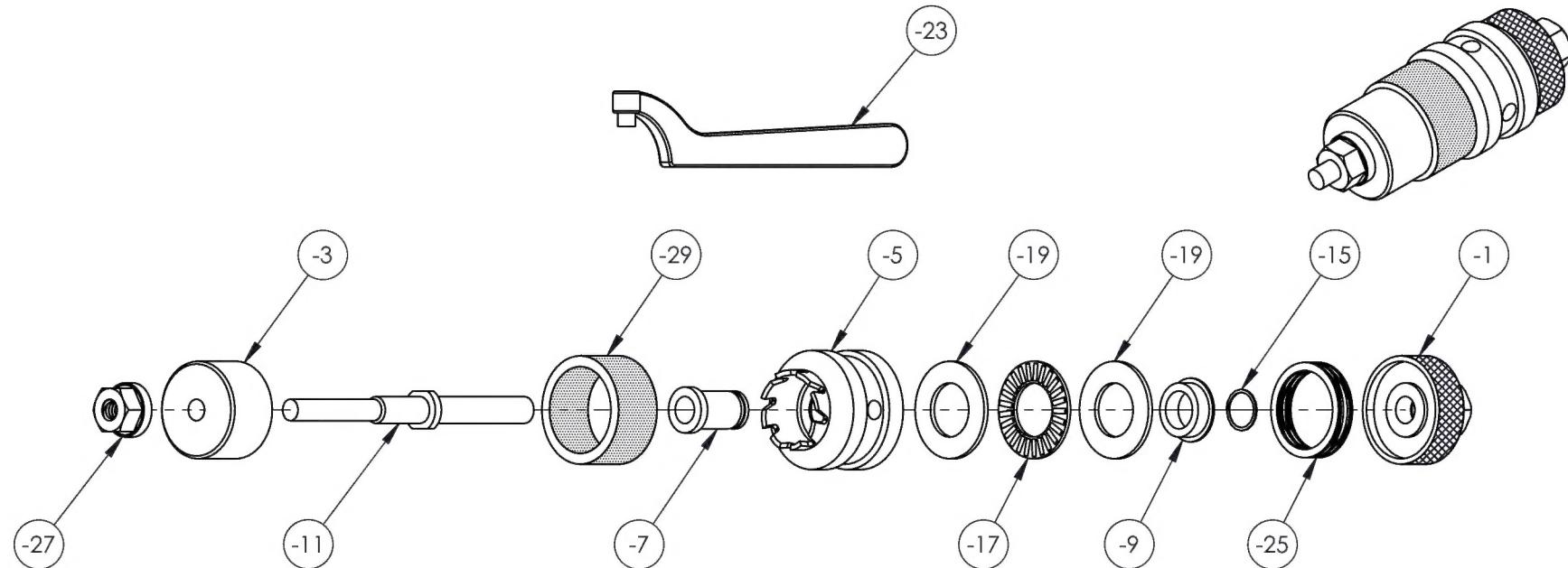


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BEARINGS AND TOOLS COVERED

BEARING #	TOOL #
406-310-403-101	RBSC7008-P
206-010-470-101	RBSC7028-P
406-312-100-101	RBSC7048-P
412-010-182-103	RBSC7188-P

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED TOOL # RBSC412-010-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CH'D -3 B FROM .312, CORRECTED -11 SCALE TO REFLECT PART REPRESENTATION PER S.E.	6/24/11	RJC	RW
4		-5 CH'D DIM SCHEME, REDREW SECTION VIEW.	7/13/2015	BIM	SE
5	15-0470	UPDATED TO NEW DRAFTING STANDARDS. ADDED NEW BEARING MODELS.	7/13/2015	SM	JAG
6	16-0112	UPDATED TO NEW STANDARD. ADDED CASE RSR GROUP #10137 TO BOM. -1 CH'D MAT'L WAS 1018 IS 1018/1020 CR. CH'D DIMS WAS ϕ .625 IS ϕ .63, WAS 5/16-24 UNF IS 5/16-24 UNF-2B, ADDED SPEC. -3 CH'D MAT'L WAS 4140 Q&T RND BAR IS 4140/4142, CH'D DIM WAS .032 X 45° IS .03 X 45° ADDED HEAT TREAT AND SPEC. -5 CH'D DIMS WAS R.030 IS R.03, WAS .015 X 45° IS .02 X 45° WAS R.015 MAX IS R.02 MAX, ADDED DIM 4X ϕ .219 ∇ .23 EQUALLY SPACED. ADDED SPEC. -11 CH'D MAT'L WAS 4140 Q&T IS 4140/4142, ADDED HEAT TREAT AND SPEC. CH'D DIMS WAS 1/4-20 MACHINE THREADS IS 1/4-20 UNC-2A, WAS 5/16-24 MACHINE THREADS IS 5/16-24 UNF-2A.	8/11/2016	DEW	SM



ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			-1	1	SPRING TENSIONER	1018/1020 CR		2
			-3	1	SEAT	4140/4142		3
			-5	1	CUTTER	O-1		4
			-7	1	GUIDE	BRONZE		5
			-9	1	BUSHING	BRONZE		6
			-11	1	STUD	4140/4142		7
B/O	-15	1	SPIRAL EXTERNAL RETAINING RING	STEEL	ϕ 7/16 SHAFT (MCMASTER-CARR # 91665A350)			1
B/O	-17	1	THRUST BEARING	STEEL	ϕ 5/8 ID. X 1-1/8 OD. X 5/64 (APPLIED # NTA-1018)			1
B/O	-19	2	THRUST WASHER	STEEL	ϕ 5/8 ID. X 1-1/8 OD. X 1/16 (APPLIED # TRB-1018)			1
B/O	-23	1	FIXED PIN SPANNER WRENCH	STEEL	ϕ 1-1/4 OD. X ϕ 13/64 PIN (MCMASTER-CARR # 5475A12)			1
B/O	-25	1	CREST TO CREST SPRING	STEEL	SMALLEY CO. # CS112-H2			1
B/O	-27	1	ROTATING FLANGE NUT	STEEL	1/4-20 ROTATING FLANGE NUT (MCMASTER-CARR #90477A029)			1
B/O	-29	1	TOOTH GUARD (FOR SHIPPING ONLY)	VINYL	SEE -5 ØB PAGE 4 FOR INSIDE DIA. OF TUBE X 5/8 LENGTH			1
B/O	-31	1	CASE	PLASTIC	(RSR GROUP # 10137)		N/S	SCALE 1:2 DATE 7/13/2015 SHEET 1 OF 7

DART
AEROSPACE

TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS

DWG NO.

RBSC7##-P

REV 6

MAT'L UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ± 5°
X ± .1 SURFACES = 125

1. BREAK ALL SHARP EDGES
.015 X 45° OR .015R

2. DIMENSIONAL LIMITS APPLY
AFTER PLATING

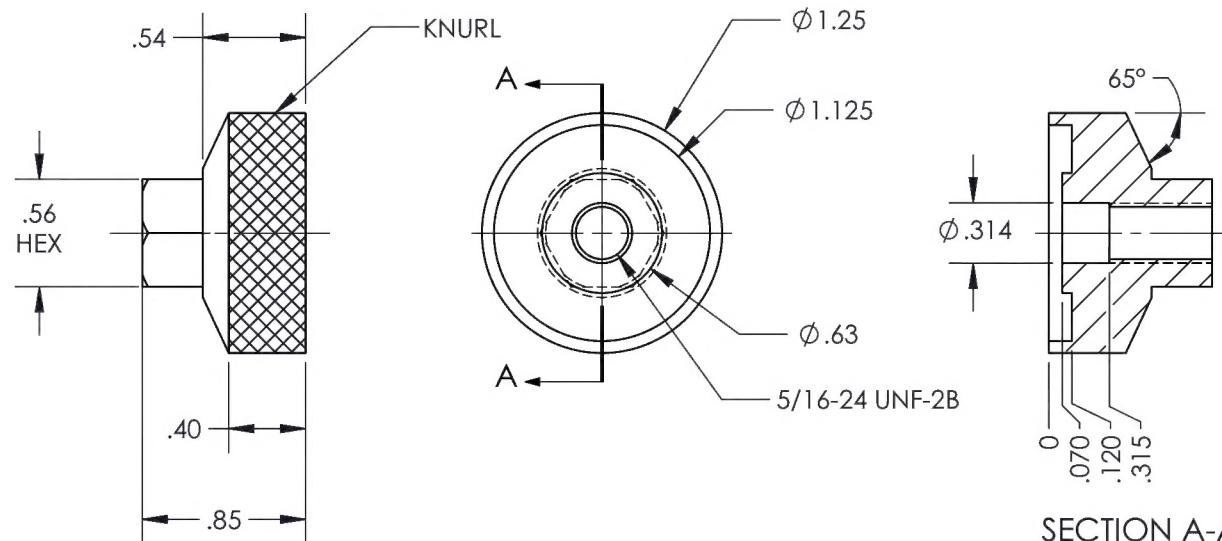
3. INTERPRET DIM AND TOL PER
ASME Y14.5M-2009

DRAWN BY: MACKOVJAK
CHECKED: DUERFELDT
OPPS APPR: ANDERSON
QA APPR: LINDSAY
APPROVED: GILBERT
USED ON MODEL

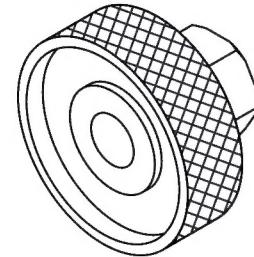
SCALE 1:2 DATE 7/13/2015 SHEET 1 OF 7

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188 TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING # 406-312-100-101 PER E.B.	5/2/11	RJC	
6	16-0112	-1 CH'D MAT'L WAS 1018 IS 1018/1020 CR. CH'D DIMS WAS ϕ .625 IS ϕ .63, WAS 5/16-24 UNF IS 5/16-24 UNF-2B. ADDED SPEC.	8/11/2016	DEW	SM



SECTION A-A

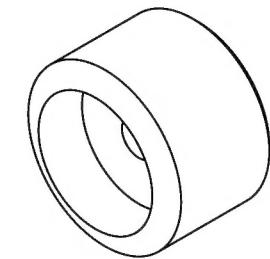
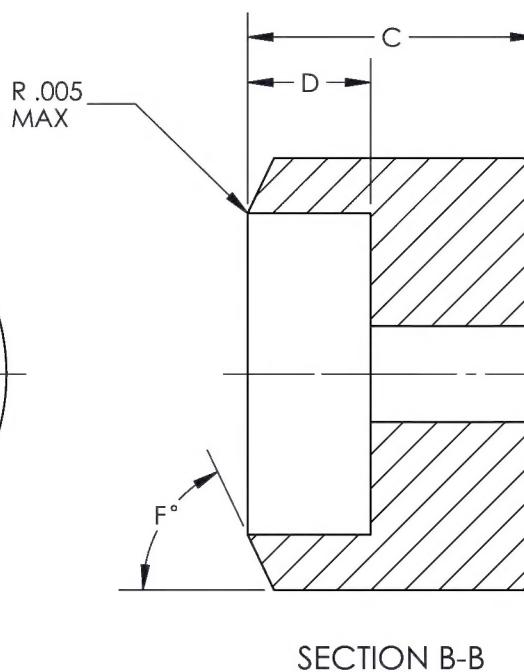
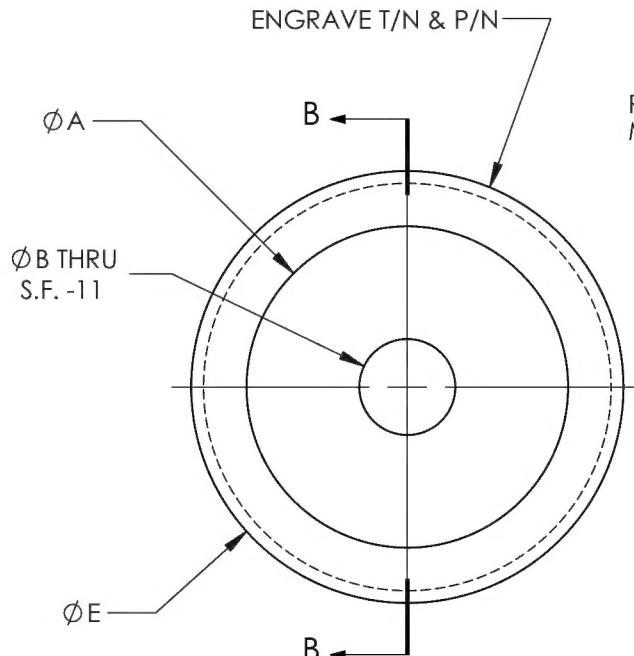


(-1)
SPRING TENSIONER

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO.	RBSC7###-P-1
REV	6
MAT'L 1018/1020 CR	
HEAT TREAT	
FINISH BLACK OXIDE	
SPEC QMSI-6.2.2, B.O. REV D	
DRAWN BY:	MACKOVJAK
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° X ± .1 SURFACES = 125	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
USED ON MODEL	
SCALE 1:1	DATE 7/9/2015
SHEET 2 OF 7	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED TOOL#RBSC412-010-182-103-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CH'D -3 B FROM 3.12 PER S.E.	6/24/11	RJC	RW
6	16-0112	-3 CH'D MAT'L WAS 4140 Q&T RND BAR IS 4140/4142, CH'D DIM WAS .032 X 45° IS .03 X 45°. ADDED HEAT TREAT AND SPEC.	8/11/2016	DEW	SM



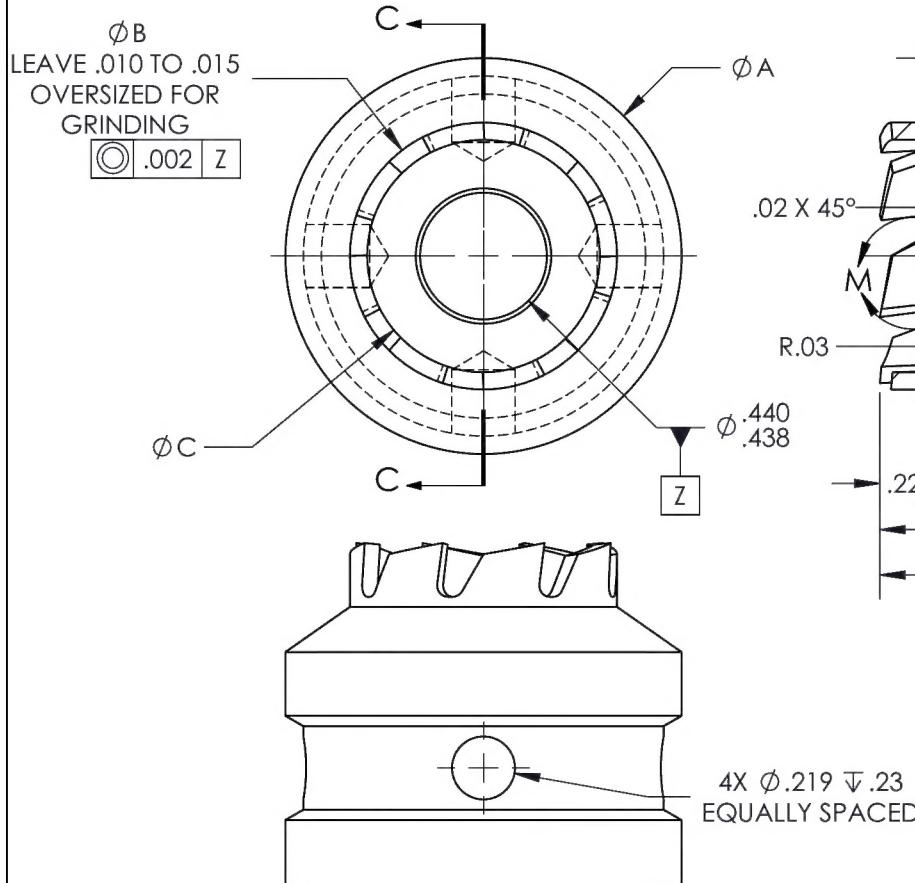
(3)
SEAT

TOOL NUMBER	ØA +.002 -.000	ØB +.002 -.000	C +.010 -.010	D +.010 -.010	ØE +.000 -.002	F +.5 -.0
RBSC7008-P	.968	.250	.750	.375	1.250	64.5
RBSC7028-P	.837	.250	.750	.320	1.125	64.5
RBSC7048-P	1.000	.250	.750	.237	1.125	90
RBSC7188-P	1.063	.250	.750	.375	1.500	64.5

DART AEROSPACE		TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS		REV 6
DWG NO.		RBSC7###-P-3		
MATERIAL 4140/4142		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
HEAT TREAT RC 28-32		.XXX ± .005 FRACTIONS ± 1/8		
FINISH BLACK OXIDE		.XX ± .01 ANGLES ± 5°		
SPEC QMSI-6.2.2, B.O. REV D		X ± .1 SURFACES = 125 ✓		
DRAWN BY: MACKOVJAK		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		
CHECKED: DUERFELDT		2. DIMENSIONAL LIMITS APPLY AFTER PLATING		
OPPS APPR: ANDERSON		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009		
QA APPR: LINDSAY		USED ON MODEL		
APPROVED: GILBERT				
SCALE 2:1		DATE 7/9/2015		SHEET 3 OF 7

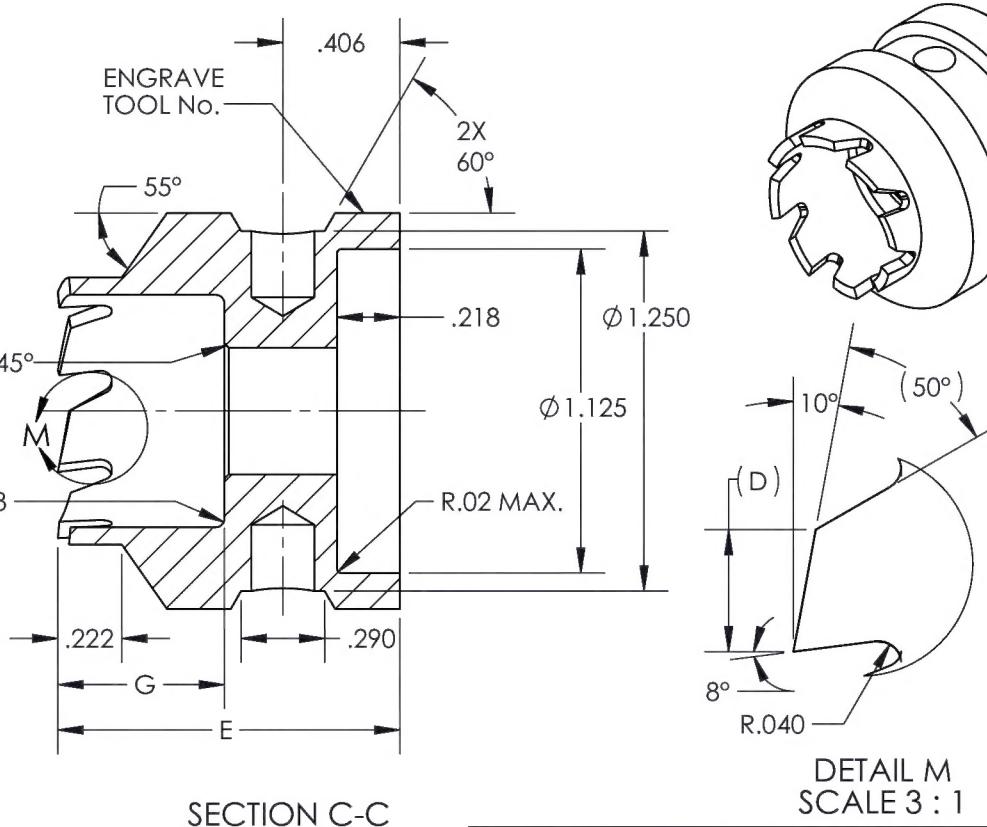
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REV			ECR			DESCRIPTION			REVISIONS		
									DATE	INITIAL	APPROVED
1						CHANGED TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.			11/6/09	WP	DW
2						ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.			5/2/11	RJC	
4						-5 CH'D DIM SCHEME, REDREW SECTION VIEW.			1/7/13	BIM	SE
6	16-0112					-5 CH'D DIMS WAS R.030 IS R.03, WAS .015 X 45° IS .02 X 45°, WAS R.015 MAX IS R.02 MAX. ADDED DIM 4X Ø.219 ±.23 EQUALLY SPACED. ADDED SPEC.			8/11/2016	DEW	SM



TOOL NUMBER	Ø A +.000 -.010	Ø B +.000 -.002	Ø C +.000 -.005	D REF.	E +.010 -.010	F TOOTH AMT.	G
RBSC7008-P	1.375	1.0185	.899	.220	1.187	8	.578
RBSC7028-P	1.375	.927	.807	.220	1.187	8	.578
RBSC7048-P	1.500	1.115	.995	.220	1.187	10	.578
RBSC7188-P	1.500	1.115	.995	.220	1.187	10	.578

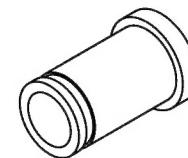
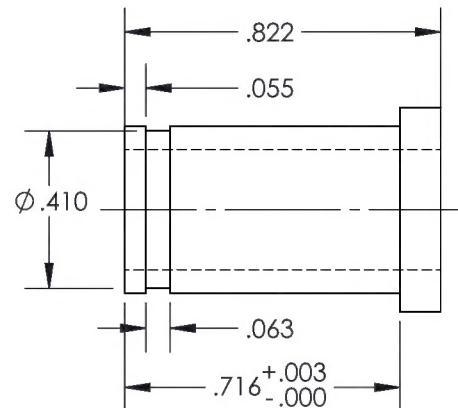
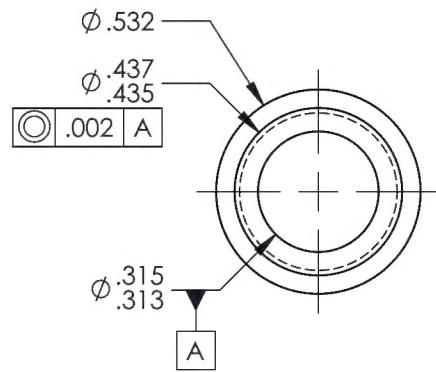
(5)
CUTTER



DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO. RBSC7###-P-5 REV 6	
MAT'L O-1 HEAT RC 55-60 TREAT FINISH BLACK OXIDE SPEC QMSI-6.2.2, B.O. REV D DRAWN BY: MACKOVJAK CHECKED: DUERFELDT OPPS APPR: ANDERSON QA APPR: LINDSAY APPROVED: GILBERT	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° X ± .1 SURFACES = 125 ✓ 1. BREAK ALL SHARP EDGES .015 X 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING 3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009 USED ON MODEL	
SCALE 3:2	DATE 7/13/2015
SHEET 4 OF 7	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLEARIFY TOOLING IDENTIFICATION	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	



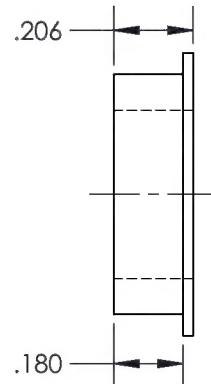
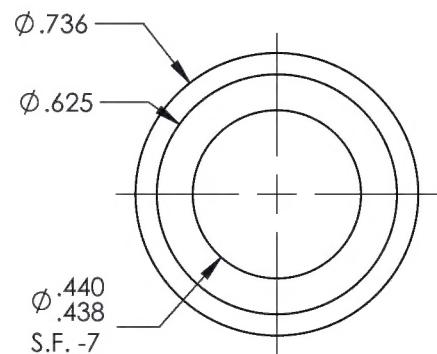
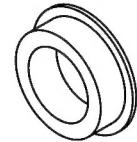
(-7)

GUIDE

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO.	RBSC7###-P-7
REV	6
MATERIAL BRONZE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HEAT	.XXX ± .005 FRACTIONS ± 1/8
TREAT	.XX ± .01 ANGLES ± 5°
FINISH	X ± .1 SURFACES = 125
SPEC	
DRAWN BY: MACKOVJAK	
CHECKED: DUERFELDT	
OPPS APPR: ANDERSON	
QA APPR: LINDSAY	
APPROVED: GILBERT	
SCALE	2:1
DATE	7/10/2015
SHEET 5 OF 7	

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REVISIONS						
REV	ECR	DESCRIPTION			DATE	INITIAL
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLEARIFY TOOLING IDENTIFICATION			11/6/09	WP
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.			5/2/11	RJC



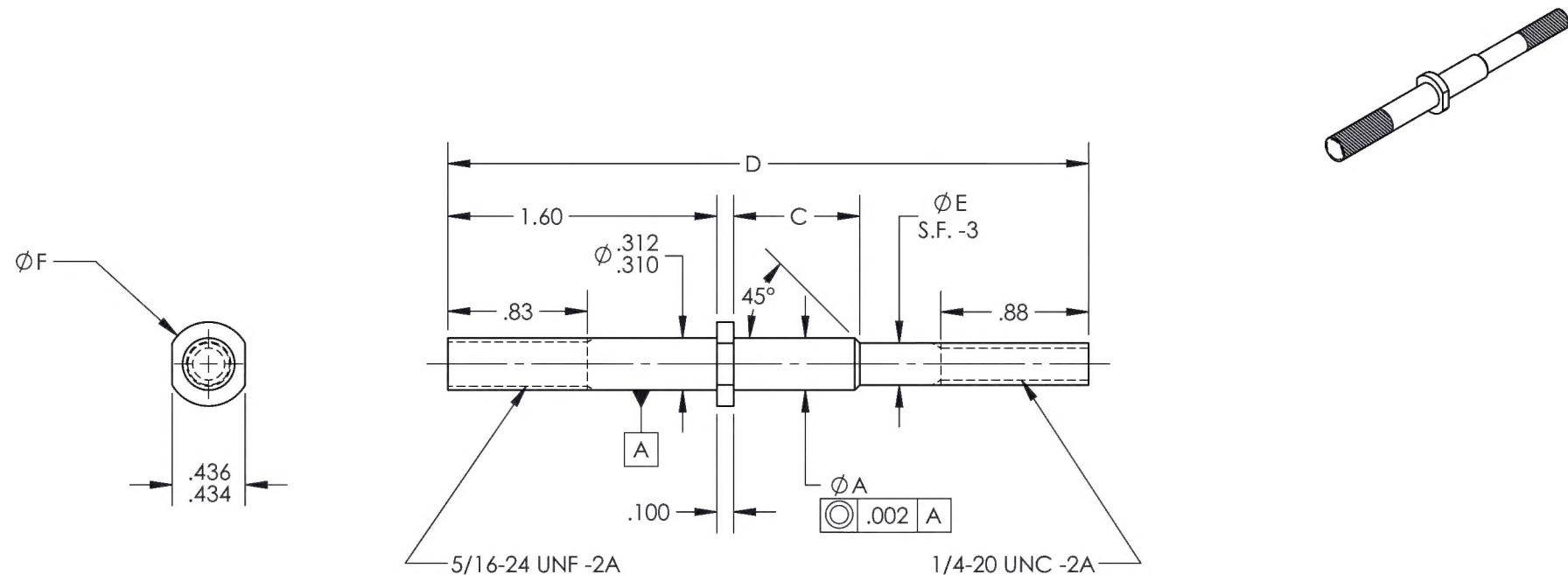
(9)

BUSHING

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO.	RBSC7###-P-9
REV	6
MATERIAL BRONZE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HEAT TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH	.XX ± .01 ANGLES ± 5°
SPEC	X ± .1 SURFACES = 125 ✓
DRAWN BY:	MACKOVJAK
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT
USED ON MODEL	
SCALE 2:1	DATE 7/10/2015
SHEET 6 OF 7	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CH'D TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CORRECTED -11 SCALE TO REFLECT PART REPRESENTATION PER S.E.	6/24/11	RJC	RW
6	16-0112	-11 CH'D MATL WAS 4140 Q&T IS 4140/4142, ADDED HEAT TREAT AND SPEC, CH'D DIMS WAS 1/4-20 MACHINE THREADS IS 1/4-20 UNC-2A, WAS 5/16-24 MACHINE THREADS IS 5/16-24 UNF-2A.	8/11/2016	DEW	SM



STUD

TOOL NUMBER	ϕ A +.000 -.002	B	C +.000 -.020	D +.020 -.010	E +.000 -.002	ϕ F
RBSC7008-P	.310	1/4-20 UNC	.750	3.875	.250	.500
RBSC7028-P	.310	1/4-20 UNC	.750	3.812	.250	.500
RBSC7048-P	.373	1/4-20 UNC	.680	4.000	.250	.500
RBSC7188-P	.310	1/4-20 UNC	.680	3.875	.250	.500

			
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS			
DWG NO. RBSC7###-P-11			REV 6
MATL 4140/4142		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HEAT TREAT RC 28-32		.XXX ± .005 FRACTIONS ± 1/8	
FINISH BLACK OXIDE		XX ± .01 ANGLES ± .5°	
SPEC QMSI-6.2.2, B.O. REV D		X ± .1 SURFACES = 125	
DRAWN BY: MACKOVJAK		✓	
CHECKED: DUERFELDT		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
OPPS APPR: ANDERSON		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
QA APPR: LINDSAY		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
APPROVED: GILBERT		USED ON MODEL	
SCALE	1:1	DATE	7/13/2015
		SHEET 7 OF 7	